



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/028,054	12/20/2001	Neil John Hursey	NAIIP049/01.250.01	2968
28875	7590	10/05/2005	EXAMINER	
Zilka-Kotab, PC			SZYMANSKI, THOMAS M	
P.O. BOX 721120			ART UNIT	
SAN JOSE, CA 95172-1120			PAPER NUMBER	

2134

DATE MAILED: 10/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/028,054

Applicant(s)

HURSEY, NEIL JOHN

Examiner

Thomas Szymanski

Art Unit

2134

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 August 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6,8-19 and 21-35 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6,8-19 and 21-34 is/are rejected.
- 7) ☒ Claim(s) 35 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 August 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

AT

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1- 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Cozza U.S. Patent No 5,502,815.

3. Regarding claim 1: identifying file access pattern for data (Fig 4 part 40, Col 4 lines 17-29)

Reading data based on said pattern (Col 3 lines 43-67) The data is read based upon the given pattern as is denoted by the implementation of the pattern, relevant information is contained within the pattern as is necessary for the procedure to continue properly.

Performing virus scan on the data (Col 4 lines 30-46)

A first unit of operations reads the data and a second scans the data. The first thread of operation is executed in parallel with the second thread such that, while a first portion of the data is being scanned, a second portion of the data to be scanned is being read and cached, so that, when a scanner is available for scanning the second portion of the data, a delay associated with reading the second portion of data is avoided. (Fig 3, Col 3 lines 49-55, Col 4 lines 17-29) Each phase of the process can be marked as a separate thread of operation. As in this case the first thread reads the data and the second scans the data as would be common in any present day processor these two

Art Unit: 2134

threads would be executed in parallel in a threaded manner as is the case with an out-of-order instruction handling processor, as such anticipating the above claim.

Furthermore, it is inherent within a microprocessor to prefetch data to prevent the processor from stalling, this process is an intrinsic element within a system that provides out-of-order instruction processing.

4. Regarding claim 2: A file access pattern is generated for the data (Col 4 lines 3-16, Fig 3) If no such pattern exists Cozza automatically generates the pattern per the scanning of the file.

5. Regarding claims 3 and 4: Data is read and virus scan performed if data has no associated access pattern, it is then determined whether scan was slower than predetermined amount and as such an access pattern is conditionally generated. (Col 4 lines 17-29). As denoted by Cozza the file access pattern is generated on the basis that the length of time for the initial scan is longer than a desired amount. Therefore, the pattern is conditionally generated on the grounds that for subsequent scans of the same file the scanning time will be reduced.

6. Regarding claim 5: Access pattern includes file location (Fig 5, Col 3 lines 55-65 Col 4 lines 10-16). Per the diagram this can be denoted as the FILEID/CACHEFILEID

7. Regarding claim 6: Access pattern includes a data amount (Fig 5, Col 4 lines 10-16) DATAFORKLEN/RESFORKLEN denotes the amount of data

8. Regarding claim 11: Determining if file access pattern is valid (Cozza Col 3 lines 53-62 fig 3) The pattern is validated as a primary step before any further analysis may take place.

Art Unit: 2134

9. Regarding claim 12: Deleting access pattern if it is invalid (Cozza Col 4 lines 4-6) Cozza states that if the file is invalid or not present then the memory is simply zeroed i.e. deleted.

10. Regarding Claim 13: Generating a new access pattern if it was deleted (Cozza Col 4 lines 4-16) As a product of there being no file access pattern or it having been deleted due to an invalid state Cozza provides for the pattern to be generated automatically.

11. Regarding Claim 31: A plurality of file access pattern are stored in a database, Each of the plurality of file access patterns being associated with a different set of data (Col 4 lines 16-29) A database is defined as an organized body of related information, as Cozza teaches the file access patterns are stored within a common medium.

12. Regarding Claim 32: File access pattern includes a checksum of a file path and a file name (Col 3 line 60 – Col 4 line 16) There is a viable checksum included of the file.

13. Regarding Claim 33: The data is stored in a cache (Fig 2, Col 3 lines 59-61, Col 3 lines 34-42)

The cache is continuously monitored for determining if data is available for scanning (Col 3 lines 34-42, Fig 4) As is inherent within a microprocessor of such a system within the instruction level one instruction cannot continue to operate if the necessary information that it references is not previously loaded into the appropriate memory location and as the functionality of such a processor dictates the necessary systems are in place for the monitoring of these resources.

Art Unit: 2134

14. Regarding Claim 35: The file access pattern is stored in binary format (Col 3 lines 49-55) A file within a computer system is stored in a binary format. That being the representation of the file is in 1's and 0's at the lowest level of the machine.

***Claim Rejections - 35 USC § 103***

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cozza U.S. Patent No. 5,502,815 as applied to claim 1 above, and further in view of DeWitt et al U.S. Patent No. 5,577,224.

17. Regarding claim 8: Cozza teaches reading the data (Col 3 49-55, Col 4 lines 17-29) As stated the access pattern is retrieved at the same time the data is read.

18. Cozza fails to explicitly teach the use of a cache for data to be scanned

19. However, DeWitt et al teaches an implementation of a cache for the purposes of improving system performance by reducing disk read time. (Abstract, Fig 1 part 26, Col 2 lines 1-2, Col 2 lines 10-21, 25)

20. A cache as stated by DeWitt et al improves the efficiency of any system over one that does not have a cache wherein data is prefetched from secondary storage and

Art Unit: 2134

placed in the cache thus reducing disk read times and increasing efficiency of the system. Therefore, one would be motivated to perform the addition of such a system as the cache described by DeWitt within the system of Cozza, as such an implementation follows the purpose of Cozza's original implementation of increasing scanning speed, which the combination would improve.

21. It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to combine the two above stated systems for the increased scanning efficiency that would thus be gained.

22. Regarding claim 9: Determining if the access pattern is valid and reading the data from the cache if it is valid. (Col 3 lines 53-67 Col 4 lines 1-9) As noted the pattern is validated and upon such determination the volume is scanned which provides for the data being read from the cache.

23. Regarding claim 10: Reading the data from cache if it has been loaded. (DeWitt Col 3 lines 14-15) As specified by DeWitt et al the data is prefetched as such this provides for the data being present before the necessary time so in such an implementation the data should always be available for reading as provided for by the system.

24. Claims 14-26 are a computer program product implementation of claims 1-13 and are thus rejected on the same basis as claims 1-13.

25. Claims 27-30 are merely a recitation of that which is claimed above and as such are rejected on the same merits as those previously rejected claims.

***Allowable Subject Matter***

26. Claim 34 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

27. The following is a statement of reasons for the indication of allowable subject matter: Claim 34 recites the limitation that in the event that a file takes longer than a predetermined amount of time the associated file access pattern is not generated in order to save space within the database. This point is counterintuitive to that which the prior art teaches, since within the prior art the file access pattern is logically generated as a result of the lengthy involved initial scan. The file access pattern is the means by which upon subsequent scans the length of time is reduced by the scanner needing to look for less possible viral elements and therefore providing for the improved scan times.

***Response to Amendment***

28. Applicant's arguments filed 10 August 2005 have been fully considered but they are not persuasive.

29. With regard to applicant's argument that Cozza does not teach the first thread of operation being executed in parallel with the second thread as stated within the above rejection of the corresponding claims each phase of the process can be marked as a separate thread of operation. As in this case the first thread reads the data and the



Art Unit: 2134

second scans the data as would be common in any present day processor these two threads would be executed in parallel in a threaded manner as is the case with an out-of-order instruction handling processor, as such anticipating the above claim.

Furthermore, it is inherent within a microprocessor to prefetch data to prevent the processor from stalling, this process is an intrinsic element within a system that provides out-of-order instruction processing. So even though Cozza does not explicitly state that the reading of the data occurs in parallel with the scanning of that data the inherent implementation of that system within a processor provides for such a feature.

30. The applicant further states that the combination of Cozza and DeWitt do not provide for the "technique" that is taught by the applicant but merely a general method. The examiner respectfully disagrees. As defined a technique is a practical method or art applied to some particular task, which is exactly what the combination of Cozza and DeWitt teaches.

31. With reference to claims 3 and 4 the examiner has retracted the statement of official notice but has still found these claims to be anticipated by the Cozza reference. Claim 34, however, has been found to be allowable for the reasons presented above.

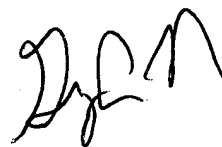
### ***Conclusion***

32. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 2134

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

JL



GREGORY MORSE  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100